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ABSTRACT

The Bronx Computer Literacy and Methodologies of Bilingual Education Program for Vietnamese and Cambodian High School Students (Project CLIMB) served 221 students of limited English proficiency (LEP) at Christopher Columbus and Walton High Schools in the Bronx (New York City). The objectives of the program were to develop the students' academic skills, assist them to improve their competency in English, and foster parents' understanding of the American educational system. The program appeared to meet the attendance objective and met one of its staff development objectives. Recommendations were made that Walton High School should: (1) provide instruction on the role of the paraprofessional in the classroom; and (2) develop an instrument to measure staff awareness of students' needs and problems, or modify this objective. In addition, the project should provide required data for OREA to measure its objectives. (GLR)

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OREA Report

EVALUATION SECTION REPORT

THE BRONX COMPUTER LITERACY AND METHODOLOGIES OF BILINGUAL EDUCATION PROGRAM FOR VIETNAMESE AND CAMBODIAN HIGH SCHOOL STUDENTS

PROJECT CLIMB
Grant Number G008525202
1988-89

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EVALUATION SECTION
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April 1990

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THE BRONX COMPUTER LITERACY AND METHODOLOGIES OF BILINGUAL EDUCATION PROGRAM FOR VIETNAMESE AND CAMBODIAN HIGH SCHOOL STUDENTS (PROJECT CLIMB) 1988-89

SUMMARY

- Project CLIMB was fully implemented. During the 1988-89 school year, students received instruction in English as a Second Language (E.S.L.), Native Language Arts (N.L.A.) at one site, and in the content area subjects of mathematics, science, social studies, and computer literacy taught with an E.S.L. approach.

- Project CLIMB failed to meet its objective in E.S.L. The project partially met its content area and staff development objectives. It met objectives for dropout and attendance rates. Because of a lack of data, it was not possible to determine whether it had met another staff development objective, or objectives in parental involvement, grade retention, or referral to outside programs.

The Bronx Computer Literacy and Methodologies of Bilingual Education Program for Vietnamese and Cambodian High School Students (Project CLIMB) was an Elementary and Secondary Education Act (E.S.E.A.) Title VII-funded program. In its fourth year--the first year of a two-year funding renewal--the project served 221 students of limited English proficiency (LEP students) at Christopher Columbus and Walton High Schools in the Bronx. The objectives of the program were to develop the students' academic skills, assist them to improve their competency in the English language, and foster parents' understanding of the American educational system.

The program offered instruction in English as a Second Language (E.S.L.); Vietnamese Native Language Arts (N.L.A.) at Walton High School only; mathematics, science, and social studies taught using E.S.L. methodology; and computer literacy. Project CLIMB included staff development and parent involvement activities.

The program appeared to meet the attendance objective, but the project submitted data on less than half of its students. It had a low grade-retention rate and lower dropout rate than that for mainstream students. The project met the objectives in those areas.

Project CLIMB met one of its staff development objectives as staff members attended in-service staff development sessions and university courses. OREA was unable to determine whether it had

met its other staff development objective since Project CLIMB did not supply the necessary data. The project did not supply data for OREA to ascertain whether the project had met its parental involvement objective.

The conclusions, based on the findings of this evaluation, lead to the following recommendations:

- The Walton High School site should provide instruction on the role of the paraprofessional in the classroom.
- Develop an instrument to measure staff awareness of students' needs and problems, or modify this objective.
- The project should provide required data for OREA to measure its objectives.

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I. INTRODUCTION

This report documents the Office of Research, Evaluation, and Assessment's (OREA's) evaluation of the fourth year of the Elementary and Secondary Education Act (E.S.E.A.) Title VII-funded program Bronx Computer Literacy and Methodologies of Bilingual Education Program for Vietnamese and Cambodian High School Students (Project CLIMB) at Christopher Columbus and Walton High Schools. The project provided instructional and support services to students of limited English proficiency (LEP students) from Asian countries.

HISTORY OF THE PROGRAM

Project CLIMB completed its fourth year in 1988-89, the first year of a two-year Title VII funding extension. A history of the project can be found in the final evaluation report of 1986-87. Activities and outcomes in prior years are described in the final reports for those years.

SETTING

Christopher Columbus High School is in a middle class neighborhood in the Bronx. The school serves some 2,600 students. In recent years, a large number of Asian families have moved into the area.

Walton High School is in a commercial area, in the Bronx. The school is in a transitional middle class neighborhood with an influx of minority-group families.

PARTICIPATING STUDENTS

The project at Christopher Columbus High School served 116 students in the fall and 107 students in the spring; at Walton High School it served 95 students in the fall and 69 students in the spring. Sixteen students left the program, transferring to other schools, dropping out, or entering the mainstream.

All program students were from low-income families, as evidenced by their eligibility to receive free school lunches.

The Cambodian and Vietnamese students had spent one to six months in refugee camps, where they had received some instruction in English before coming to the United States. About 25 percent of the Chinese and Korean students had studied English while attending the equivalent of our junior high schools. Native language literacy also varied. More than 70 percent of project students were over-age for their grade. (See Table 1.)

STAFF

Project staff consisted of a project director and, at each site, a paraprofessional.

Each school's assistant principal of foreign languages supervised project staff. At Columbus High School, a total of 17 teachers were associated with the project; fourteen were licensed in the areas they taught. The school administration assigned two additional non-Title VII paraprofessionals to the project on a full-time basis.

TABLE 1

Number of Program Students by Age and Grade[a]

Age	Grade 9	Grade 10	Grade 11	Grade 12	TOTAL
13	1	0	0	0	1
14	3	0	0	0	3
15	5	6	0	0	11
16	9	12	6	0	27
17	9	13	13	0	35
18	4	12	21	15	52
19	0	5	8	22	35
20	2	0	3	17	22
21	0	1	4	9	14
22	0	0	1	4	5
TOTAL	33	49	56	67	205[b]

Students Over-Age for Grade

Number	24	31	37	52	144
Percent	72.7	63.3	66.1	77.6	70.2

Note: Framed boxes indicate expected age range for grade.

[a]As of June 1989.

[b]Data were missing for 16 students.

- Ninth grade had the fewest participating students; twelfth had the most.
- Seventy percent of the students were over-age for their grade placement.

At Walton High School, the project worked with ten teachers. The assistant principal devoted 20 percent of her time to teaching for the program. All were licensed in the areas they taught.

DELIVERY OF SERVICES

Participating students received instruction in E.S.L., N.L.A. (for Vietnamese students), and in mathematics, science and social studies taught with an E.S.L. approach. Project CLIMB provided guidance and support services, staff development activities, and E.S.L. classes for students' parents and siblings.

REPORT FORMAT

This report is organized as follows: Chapter II describes the evaluation methodology; Chapter III describes CLIMB's implementation and evaluates the attainment of its implementation objectives; Chapter IV examines the project's attainment of its student outcome objectives; and Chapter V gives conclusions and recommendations based upon the results of the evaluation.

II. EVALUATION METHODOLOGY

EVALUATION QUESTIONS

The evaluation assessed two major areas: program implementation and outcomes. Evaluation questions included the following:

Process/Implementation

- Did the program select students for program participation according to specific criteria?
- How did the project mainstream its students?
- Did the project implement the computer activities for developing English language proficiency as proposed?
- Did the staff take part in the in-service activities offered to them?

Outcome

- What was the average Normal Curve Equivalent (N.C.E.) gain on the LAB?
- What percentage of program students passed their courses in mathematics, science, and social studies?
- How did the attendance of program students compare with that of mainstream students?
- How did the dropout rate of program students compare with that of mainstream students?
- How did the grade retention rate of project students compare with that of mainstream students?

EVALUATION PROCEDURES

Sample

The OREA field consultant interviewed all project staff, both principals, and the assistant principal at Columbus High

School. He observed two classes at each site. OREA provided a student data form for each participant each semester. Project CLIMB returned 187 of these forms in the fall and 166 forms in the spring.

Instruments

Project personnel used OREA-developed data forms to report information on student demographics, attendance, and achievement. The project director completed OREA-developed questionnaires each semester. OREA used school and project records to assess attendance and achievement data. OREA developed interview and observation schedules for the use of the field consultant.

Data Collection

The field consultant interviewed school and program staff, and observed classes during the months of May and June. OREA sent out student data forms and the project director's questionnaire in December and May; the project returned them in February and June.

Data Analysis

OREA used the Language Assessment Battery to assess improvement in English proficiency. Project CLIMB students were tested at grade level each spring. Students' raw scores were converted to Normal Curve Equivalent (N.C.E.) scores, which have multiple advantages over other scoring methods. They are standard, normalized, and form an equal interval scale. ("Standard" indicates that the unit of measurement is a fraction

of the standard deviation of the original distribution of raw scores; "normalized" refers to the fact that the scale is adjusted for the norm group so that its distribution has the shape of a normal distribution; and "equal interval scales" allow for legitimate aggregation or averaging of scores.) Project students' N.C.E.s indicated their standing in relation to the national average of 50.

To assess the significance of students' achievement in English, OREA computed a correlated t-test on LAB N.C.E. scores. The t-test determined whether the difference between the pre- and posttest scores was significantly greater than would be expected by chance variation alone.

To insure representative achievement data, OREA included only those students who had been in the program for at least five months and had attended classes for at least 100 school days. OREA extrapolated to estimate full-year scores of late-arriving and early-exiting students.

Limitations

Since all LEP students are entitled to receive bilingual and E.S.L. services, OREA was unable to select an equivalent control group. However, the use of two sets of data, as outlined above, served in lieu of a control group.

III. EVALUATION FINDINGS: IMPLEMENTATION

STUDENT PLACEMENT AND PROGRAMMING

Project CLIMB selected students on the basis of scores on the Language Assessment Battery (LAB)*, school records, letters of recommendation from teachers, and personal interviews.

Christopher Columbus High School mainstreamed students if they passed the Regents Competency Test (R.C.T.) in English, regardless of LAB score. Walton High School mainstreamed students if they received grades of 80 or above in their content area subjects. Mainstreamed students continued to take E.S.L. and courses taught with an E.S.L. approach. Project CLIMB followed up mainstreamed students for one year.

INSTRUCTIONAL ACTIVITIES

English as a Second Language

Columbus High School offered six levels of English grammar and writing, six levels of E.S.L. reading, a transitional E.S.L. workshop, and an E.S.L. reading workshop. Walton High School offered seven E.S.L. levels: beginning E.S.L. met three periods per day and five higher levels met two periods a day (one period

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*The Language Assessment Battery (LAB) was developed by the Board of Education of the City of New York to measure the English-language proficiency of non-native speakers of English to determine whether they can participate effectively in classes taught in English. Students scoring below the twenty-first percentile on the LAB were entitled to bilingual and E.S.L. services.

of which was devoted to conversation). The transitional-level course met for one period daily.

The OREA field consultant observed an E.S.L. class of 16 students at Christopher Columbus High School. Eight of the students were project participants. Students responded chorally to the teacher's reading. The teacher then questioned the students about vocabulary and content. All classroom exchange was in English.

The consultant also observed an intermediate E.S.L. lesson at the same school. Of the 12 students present, three were in the project. The class reviewed grammar to prepare for a test. The teacher then dictated an excerpt on Cambodian dances and reviewed nouns and prepositions. Next, students divided into four groups for individual and group exercises. The class ended with an exercise on adverbs. The teacher worked with students individually and in groups. Most communication was in English, although some small group discussions were in the native languages.

Native Language Arts

The project did not propose N.L.A. objectives. Christopher Columbus High School did not offer any N.L.A. courses; Walton High School offered one N.L.A. course to prepare students for the R.C.T. in Vietnamese.

Content Area Subjects

All Project CLIMB academic courses at Columbus High School used E.S.L. techniques. Participating students took four terms of social studies, a general science course (new this year), and two one-year mathematics courses. Students in need of remediation enrolled in a special R.C.T. mathematics course which met for two periods daily. The project also offered keyboarding and an art class.

Walton High School offered content area courses taught with E.S.L. techniques in chemistry, global history, keyboarding, and remedial mathematics. Students took regular sequence mathematics in mainstream classes.

The consultant observed a chemistry class on colloids at Walton High School; 21 tenth-grade Project CLIMB students were present. The teacher wrote technical vocabulary on the chalkboard and discussed terms. One student read the results of a previous experiment, and the lesson ended with a presentation by the teacher. The students did not participate in the discussion. All communication was in English. A paraprofessional was in the classroom but participated only minimally.

The OREA consultant also observed a mathematics class at Walton High School. Twenty-four students were present; 15 were project participants. The students were preparing to take the R.C.T. in mathematics. The students worked independently on an R.C.T. pamphlet and then discussed the material. The teacher

gave individual instruction to those who requested it. The resource teacher and paraprofessional were in the classroom and gave instruction in Khmer and Vietnamese. Teacher and student interchange was in English. All staff moved around the classroom, helping students individually.

After the lesson, the teacher stated to the evaluation consultant that the students' English skills were too weak for them to understand explanations and that the curriculum content was too difficult for the average project student. She had requested and received approval from the assistant principal for mathematics to develop an E.S.L. curriculum with fewer English explanations, more figures, and a different sequence. She had submitted this new curriculum for consideration to the appropriate channels.

NON-INSTRUCTIONAL ACTIVITIES

Staff Development

- Ninety percent of program staff will demonstrate professional growth by completing courses of study and attending in-service training sessions.
- Eighty-five percent of the staff in the program will demonstrate an increase in awareness of pupil needs and pupil problems as indicated by a five-point scale of problems and needs inventory.

Staff development activities at Christopher Columbus High School included ten monthly faculty meetings and two program staff meetings. The agenda for the latter included training in curriculum development, child abuse prevention, discipline, attendance, and students' homework. The paraprofessional attended ten monthly meetings of the American Agency, held at St.

Rita Church, at which Cambodian and community problems were discussed.

The resource teacher took six college credits at Hunter College; the paraprofessional took six at Lehman College.

Project staff development activities at Walton High School included ten monthly departmental meetings to discuss lesson plans, student aid, and other activities. The school's foreign languages department held ten monthly faculty meetings, which project staff attended.

The program presented four on-site workshops on suicide prevention, computer literacy, child abuse, and club activities in the school.

The paraprofessional and two parents attended a three-day workshop in Albany.

Project CLIMB met its staff development objective for professional growth. OREA was unable to evaluate the objective for needs awareness, since the project did not provide data.

Parental Involvement

- Parents of target students will demonstrate more parental involvement than parents of mainstream students by demonstrating a ten to 15 percent higher attendance at school functions.

At Columbus High School, Project CLIMB presented 15 parent-student workshops. However, the project did not supply the necessary attendance data for either program or mainstream parents, so OREA was unable to determine achievement of this objective.

IV. EVALUATION FINDINGS: OUTCOMES

INSTRUCTIONAL ACTIVITIES

English as a Second Language

The evaluation objective for English language development was:

- Participating students will make statistically significant gains in English language achievement as measured by the Language Assessment Battery.

Project CLIMB provided complete LAB pre- and posttest scores for 63 students in grades 9 through 12. Students in the ninth grade made significant gains ($p < .05$). However, the mean N.C.E. gain of Project CLIMB students was 2.4 (s.d.=11.8), which was not significant. (See Table 2.) The project, therefore did not meet its E.S.L. objective.

Content Area Subjects

The evaluation objective for science, computer science, mathematics, and social studies was:

- Eighty-five percent of participating students will achieve a passing grade in the content area courses.

During the fall semester, at least 85 percent of the students passed their science, social studies, and business/vocational (computer) courses; in the spring, the same percentage passed in bussines/vocational. (See Table 3.) Project CLIMB partially met this objective.

TABLE 2

Pretest/Posttest N.C.E. Differences on Language Assessment Battery, by Grade

Grade	Number of Students	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference Mean	Difference S.D.	t value
9	11	10.9	12.1	20.8	17.9	9.9	7.8	4.19*
10	20	14.7	8.1	18.4	10.9	3.7	13.4	1.23
11	18	19.5	13.0	18.5	11.7	-1.0	8.5	-0.51
12	14	19.6	8.3	18.4	13.8	-1.1	13.3	-0.32
TOTAL	63	16.4	10.8	18.8	12.9	2.4	11.8	1.59

*$p<.05$

- Matching pretest/posttest data were available only for 63 students.
- Only ninth graders showed a significant gain from pretest to posttest.

TABLE 3

Passing Rates in Content Area Courses

Content Area	Fall		Spring	
	Number of Students	Percent Passing	Number of Students	Percent Passing
Mathematics	74	71.6	70	50.0
Science	67	88.1	60	73.3
Social Studies	72	91.7	80	78.8
Business/Vocational	38	92.1	22	95.5
Overall		85.7		75.3

Note. Students may have simultaneously taken courses in more than one content area.

- Over 85 percent of participating students passed their business/vocational courses both semesters.
- Over 85 percent of participating students passed their science and social studies courses in the fall.

NON-INSTRUCTIONAL ACTIVITIES

Attendance

The attendance objective stated:

- The attendance rate of target students will be ten to 15 percent greater than mainstream students.

Project CLIMB reported an attendance rate of 95.3 percent. The average daily attendance rate at Columbus High School was 80.5 percent, at Walton High School 79.3 percent. It appears that Project CLIMB met its attendance objective. However, the project reported attendance data on only 99 of its 221 students, so this finding lacks certainty.

Dropout Rate

The dropout objective was:

- The percentage of dropouts for target students will be ten to 15 percent less than mainstream dropouts.

The dropout rate of participating students ranged from a low of 1.9 percent at Walton High School in the spring to a high of 9.4 percent at Christopher Columbus High School in the fall. The total figure for both semesters at Christopher Columbus High School was 7.9 percent and at Walton High School 4.2 percent.

OREA was unable to calculate dropout rates for the target schools for the 1988-89 school year. However, the sites had an average dropout rate of 8.6 percent during 1987-88. Assuming this number did not change drastically in the subsequent school year, it appears that Project CLIMB met its dropout rate objective.

Grade Retention and Placement in Outside Programs

- As a result of participation in the program, students' rate of grade retention and rate of referral to, or placement in, special education classes will be less than mainstream students.

- As a result of participation in the program, placement in programs for gifted and talented, and enrollment in post secondary education institutions will be greater than mainstream students.

Grade retention and outside referral rates were not available for the mainstream students, therefore OREA was unable to evaluate either of these objectives.

V. CONCLUSIONS AND RECOMMENDATIONS

In its fourth year of funding, as in the previous year, Project CLIMB failed to meet its E.S.L. objective and only partially met the content area objective. The project did not propose an objective for N.L.A. instruction. The project met one of its two staff development objectives; OREA could not assess the other one because of a lack of data. Nor did the project provide OREA with data to assess objectives for parental involvement, grade retention, and placement in outside programs. The project apparently met its attendance objective, but submitted data on less than half its students, so this finding lacks certainty. The objective for a lowered dropout rate also appears to have been met, but the project did not provide mainstream dropout rate figures for the year under review and OREA based its findings on figures from the previous year.

The project provided no information on activities for parents at Walton High School. The 15 workshops offered to parents at Christopher Columbus High School appear appropriate; however, the project did not provide attendance data for OREA to evaluate the objective as proposed.

The conclusions, based on the findings of this evaluation, lead to the following recommendations:

- The Walton High School site should provide instruction on the role of the paraprofessional in the classroom.
- Develop an instrument to measure staff awareness of students' needs and problems, or modify this objective.
- The project should provide required data for OREA to measure its achievements.